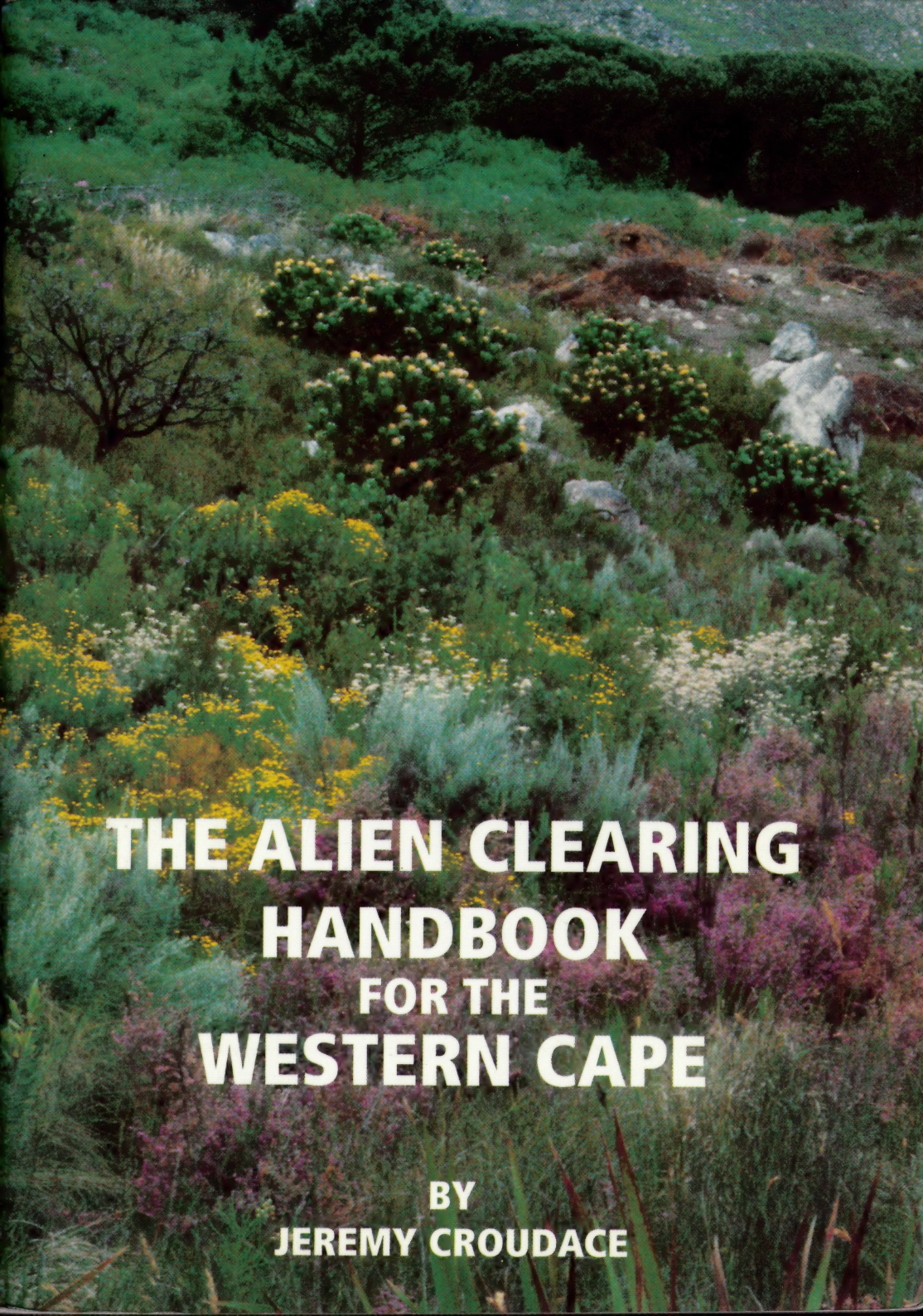

THE ALIEN CLEARING
HANDBOOK
FOR THE
WESTERN CAPE
BY
JEREMY CROUDACE

FOREWORD

For many years, the eradication of invasive alien vegetation from natural areas was left to small groups of dedicated nature lovers. At last, and largely as a consequence of the recognition of the impact on water resources, the eradication of alien vegetation is receiving serious attention.

In this handbook, Jeremy Croudace challenges current extensive alien hacking practices, where alien clearing is regarded as an unskilled job undertaken by large teams and which will inevitably involve costly follow-up procedures. He shows clearly that the long-term control of alien vegetation involves two things - the individual invading plant and the individual worker. Dealing with the plant requires an understanding of the survival tactics of each species and the application of appropriate techniques to ensure that there is no regrowth. Each individual worker should acquire the knowledge and skill to deal appropriately with the invading plant species. It is only through the recognition of the appropriate training that effective alien vegetation control with minimal damage to the indigenous vegetation will be achieved.

Although the handbook has been produced primarily for workers and nature lovers, rather than for scientists and managers, it should be used as a baseline reference for any person or institution involved in the clearing of alien vegetation. The major invasive alien species can be recognised easily and the permanent eradication of individual plants is clearly explained. However, the successful clearing and control of invasive alien vegetation will not occur without comprehensive training programmes and the development of skills and capacity. Training and capacity-building is an essential part of the future of South Africa. This handbook serves as a necessary resource in such a training programme.

The work of people like Jeremy Croudace often goes unrecognised by the professional scientific community, yet it is the commitment of these people that makes a fundamental difference to the rehabilitation of natural areas. This handbook is the product of years of quiet and determined dedication. Jeremy Croudace has trained several small groups of unskilled and largely illiterate people, using the concepts, scientific principles and techniques explained so clearly in the booklet. He has engendered in them knowledge of basic ecology and a love for the veld - the only sound basis for the long-term control of alien vegetation invasion.

Andy Gubb
Wildlife and Environment Society of South Africa
Western Cape Region

T619
R20

THE ALIEN CLEARING HANDBOOK FOR THE WESTERN CAPE

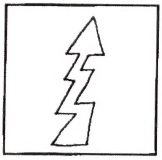
By Jeremy Croudace

Drawings by Kane Croudace

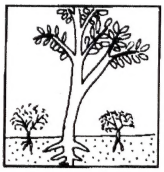
Published by
Bo-Kloof Fynbos Conservation & Environmental Information Trust

GLOSSARY (What the pictures mean)

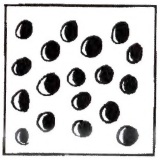
PLANT SURVIVAL



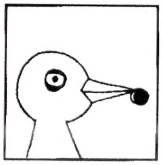
GROWS FAST



GROWS BIGGER THAN FYNBOS

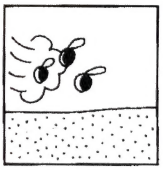


MAKES LOTS OF SEEDS

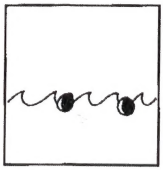


SEEDS SCATTERED BY BIRDS

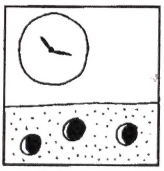
SEEDS SCATTERED BY ANTS



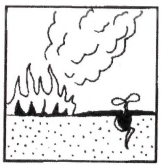
SEEDS SCATTERED BY THE WIND



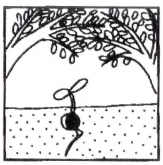
SEEDS SPREAD DOWNSTREAM BY WATER



SEEDS CAN SLEEP IN THE GROUND FOR MANY YEARS

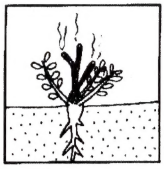


FIRE SIGNALS THE SEEDS TO START GROWING

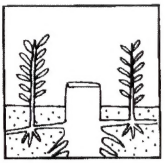


SEEDS CAN START TO GROW IN SHADE OR FOREST

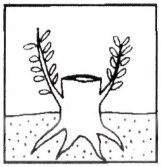
PLANT SURVIVAL



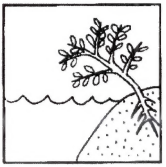
NEW GROWTH SPROUTS FROM THE BASE OF THE STEM



NEW GROWTH SPROUTS FROM ROOTS

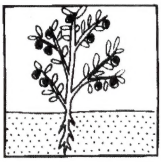


NEW GROWTH SPROUTS FROM THE STEM



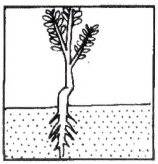
GROWS IN DAMP OR WET AREAS

THORNS OR PRICKLES

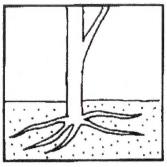


SEEDS STORED ON PLANT UNTIL FIRE OR CUTTING

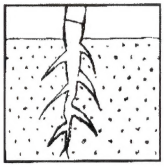
PLANT IS POISONOUS IF EATEN



YOUNG PLANT BREAKS OFF AT THE KINK WHEN PULLED



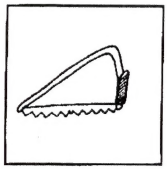
YOUNG PLANT HAS SHALLOW ROOTS
(easy to pull)



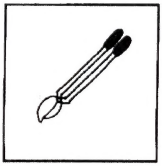
YOUNG PLANT HAS DEEP TAPROOT
(difficult to pull)

GLOSSARY (What the pictures mean)

TOOLS

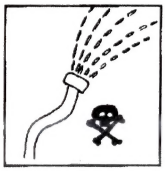


BOW SAW
350 mm

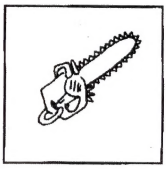


LOPPERS

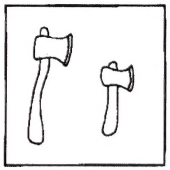
HERBICIDE
(poison)
DABBING BOTTLE



HERBICIDE
(poison) SPRAY

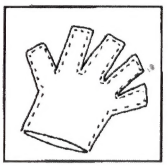


CHAINSAW
(For use on big trees)

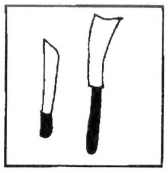


AXE
CHOPPER

GOGGLES

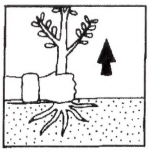


GLOVES

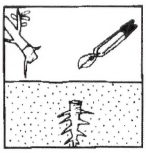


PANGAS

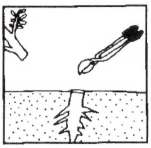
HOW TO DO IT



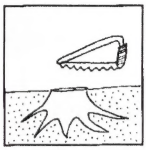
GRIP LOW DOWN AND PULL OUT BY HAND



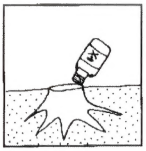
PUSH LOPPERS 40 mm INTO THE GROUND AND CUT PLANT OFF AT ROOT LEVEL



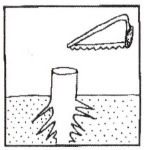
CUT TREE OFF AT GROUND LEVEL



SAW TREE OFF AT GROUND LEVEL

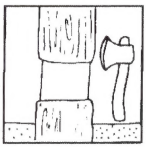


IMMEDIATELY DAB POISON ON REMAINING BARK

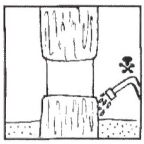


SAW TREE OFF ABOUT 25cm ABOVE GROUND LEVEL

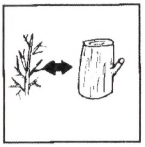
PEEL ALL THE BARK OFF TO BELOW THE GROUND



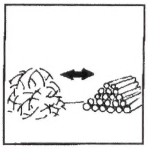
RING BARKING:
CUT TWO GROOVES AROUND THE TREE ABOUT 30 – 40 cm APART. THEN, WITH THE BLUNT END OF THE CHOPPER, LOOSEN AND REMOVE ALL THE BARK IN BETWEEN



IMMEDIATELY SPRAY POISON ON THE REMAINING BARK BELOW THE REMOVED AREA



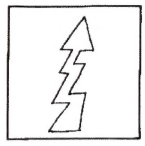
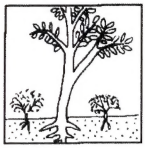
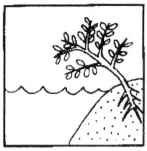
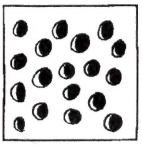
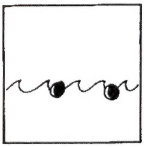
SEPARATE TWIGS FROM FIREWOOD

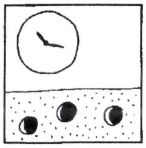


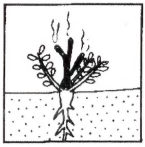
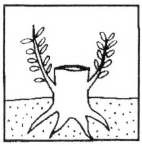
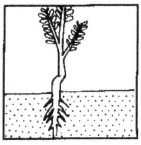
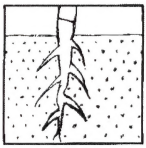
MAKE SEPARATE PILES

PORT JACKSON
Acacia saligna

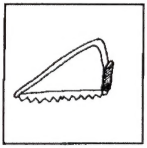
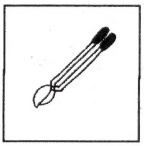
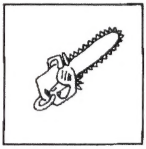
PLANT SURVIVAL



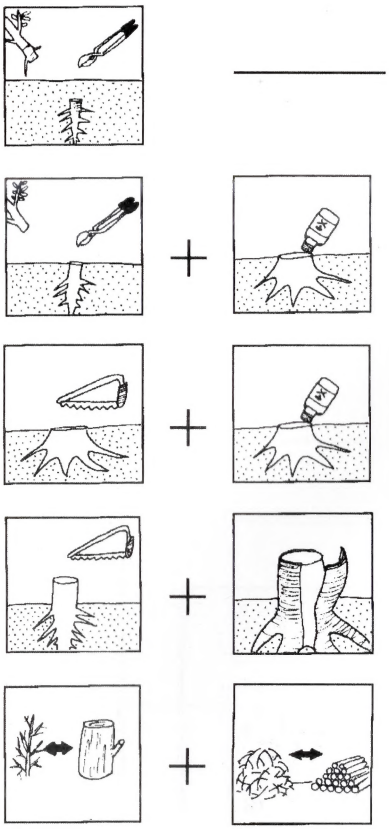





TOOLS

PORT JACKSON
Acacia saligna

HOW TO DO IT



NOTES:

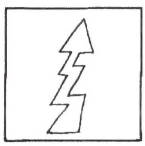
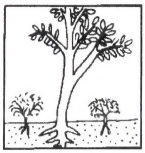
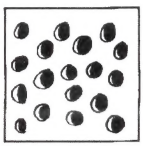
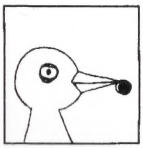
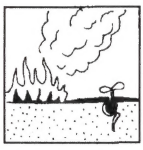
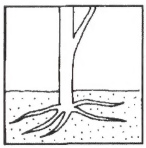
Although Port Jackson has been infected with the gall fungus Uromycladium tepperianum, it is still a troublesome weed in lowland areas.

Old trees with rough flaky fire-proof bark don't resprout, if the cut is clean.

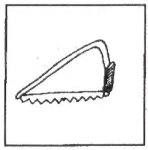
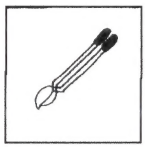
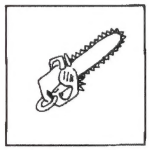
TIP: Knock on the bark with the back of the saw to loosen it before peeling.

ROOIKRANS
Acacia cyclops

PLANT SURVIVAL

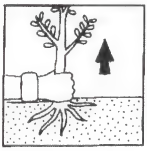







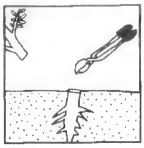
TOOLS

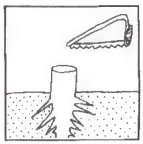




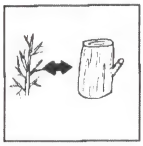
ROOIKRANS
Acacia cyclops

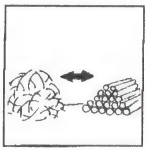
HOW TO DO IT











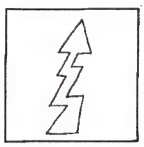
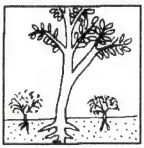
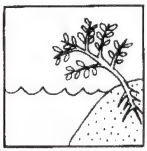
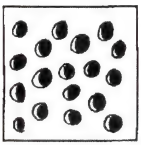
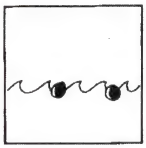
NOTES:

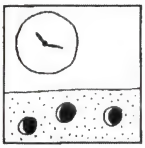
Rooikrans makes good braai-wood.

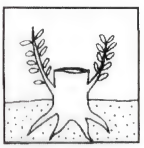
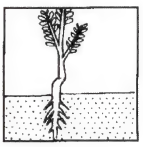
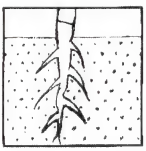
Rooikrans often grows on sand blown inland from the sea.

GOLDEN WATTLE
Acacia pycnantha

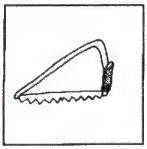
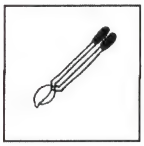
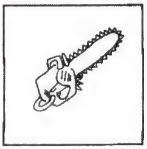
PLANT SURVIVAL



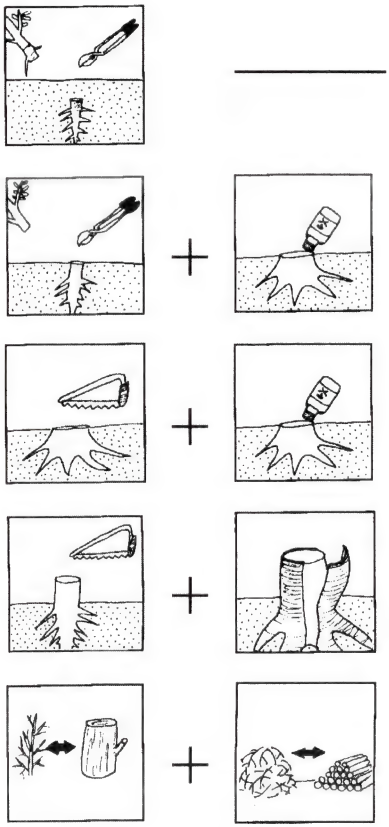




TOOLS

GOLDEN WATTLE
Acacia pycnantha

HOW TO DO IT



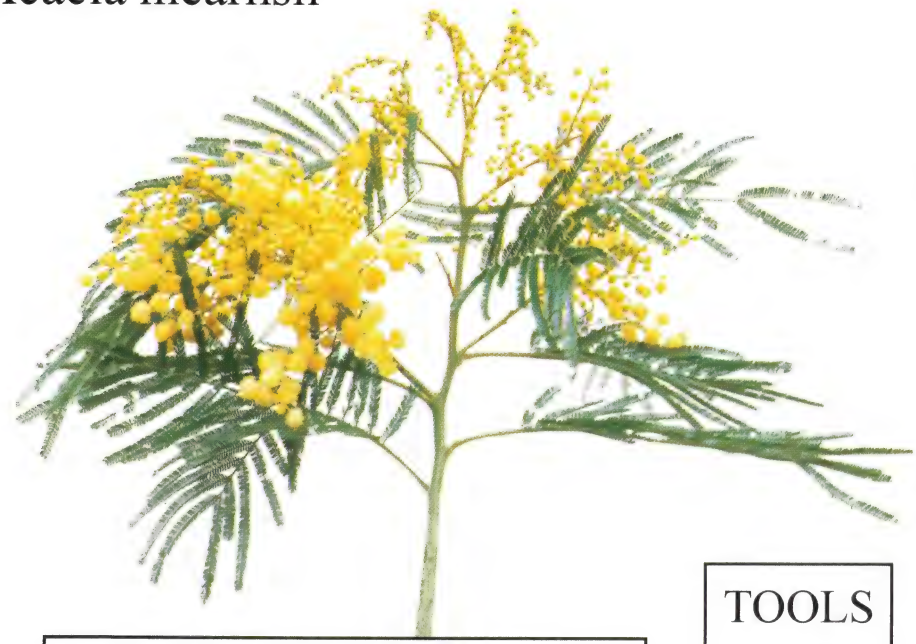
NOTES:

Golden wattle has no natural enemies in South Africa and it has very similar survival tactics to Port Jackson. It seems likely to become a big problem in the future.

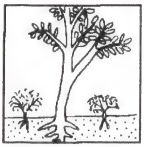
Old trees don't resprout.

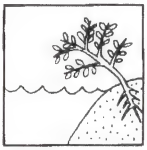
TIP: Knock the bark with the back of the saw to loosen it before stripping.

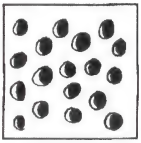
BLACK WATTLE
Acacia mearnsii

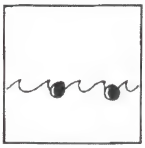


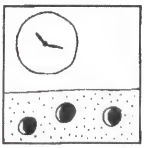
PLANT SURVIVAL

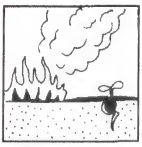


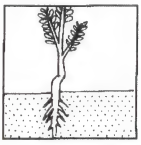


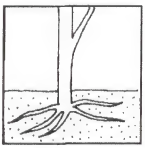




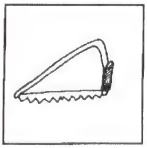


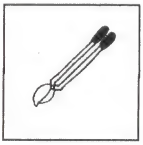


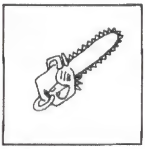




TOOLS

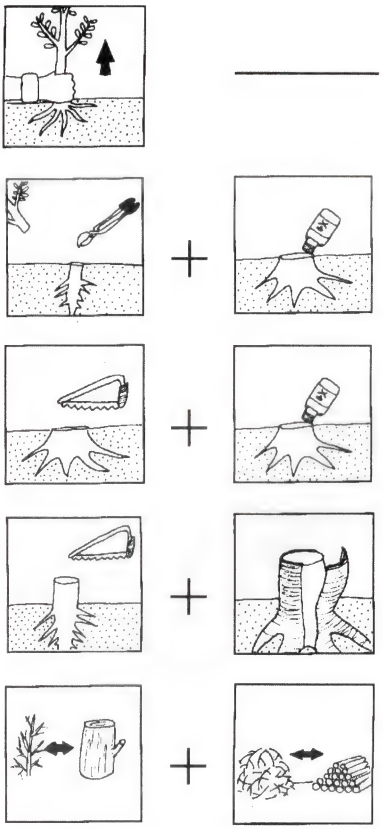






BLACK WATTLE
Acacia mearnsii

HOW TO DO IT

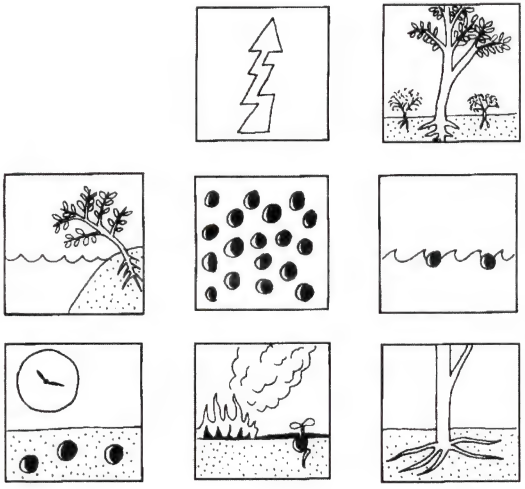


NOTES:

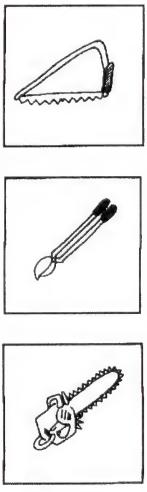
Old black wattles with rough flaky bark do not resprout if the cut is clean. Otherwise treat with herbicide.

LONGLEAF WATTLE
Acacia longifolia

PLANT SURVIVAL

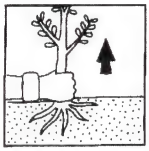


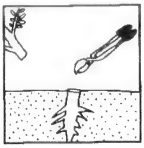
TOOLS

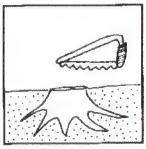


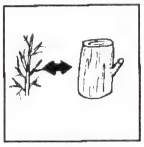
LONGLEAF WATTLE
Acacia longifolia

HOW TO DO IT

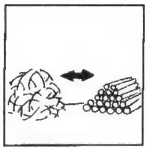








+

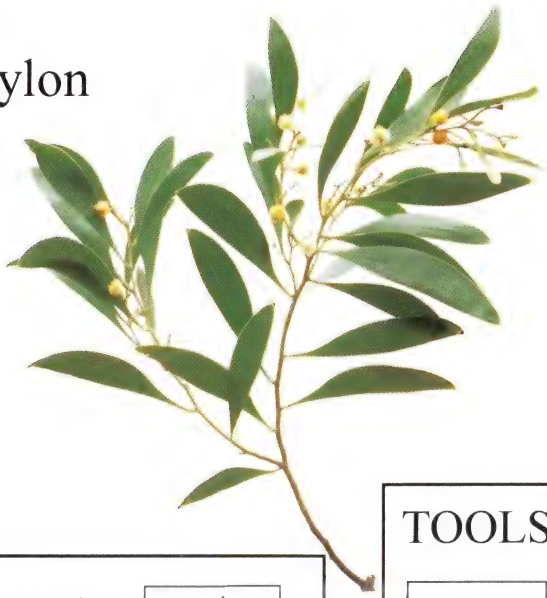


NOTES:

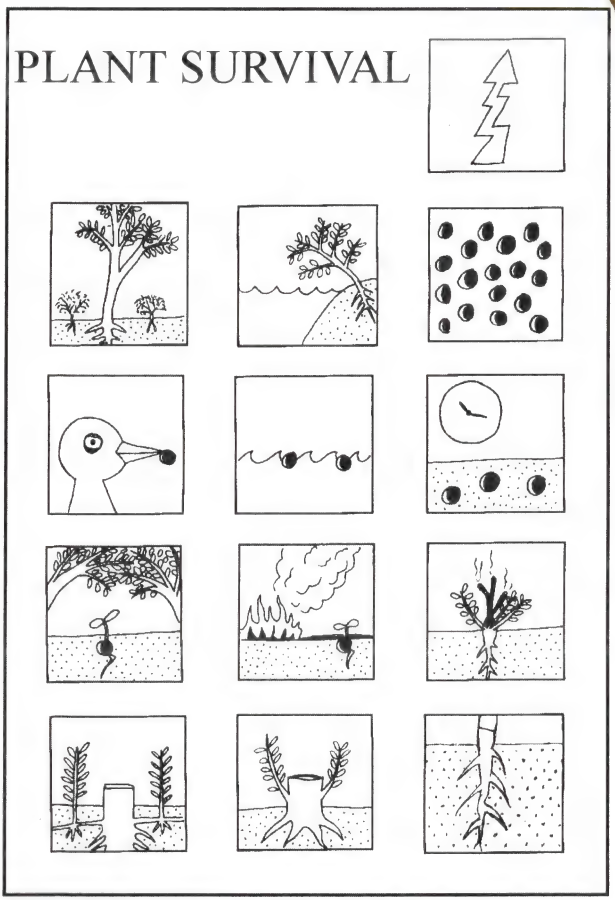
Longleaf wattle does not readily resprout after cutting, but sometimes there are small branches or undeveloped buds on the bark which can grow. This is why the tree is cut off at ground level, to remove all chances of resprouting.

Longleaf wattle has been infected with a gall wasp which reduces seed production.

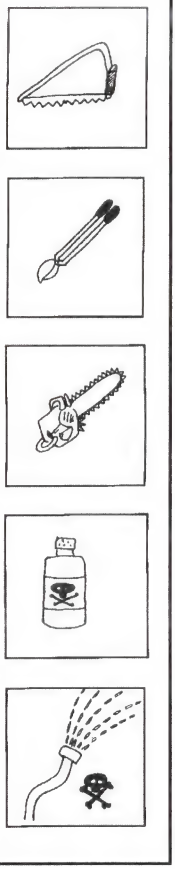
BLACKWOOD
Acacia melanoxylon



PLANT SURVIVAL

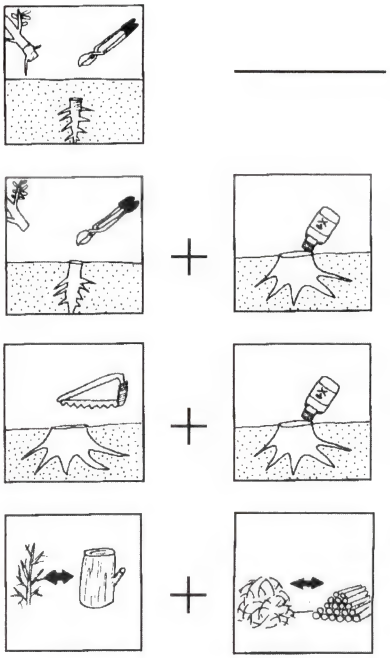


TOOLS



BLACKWOOD
Acacia melanoxylon

HOW TO DO IT

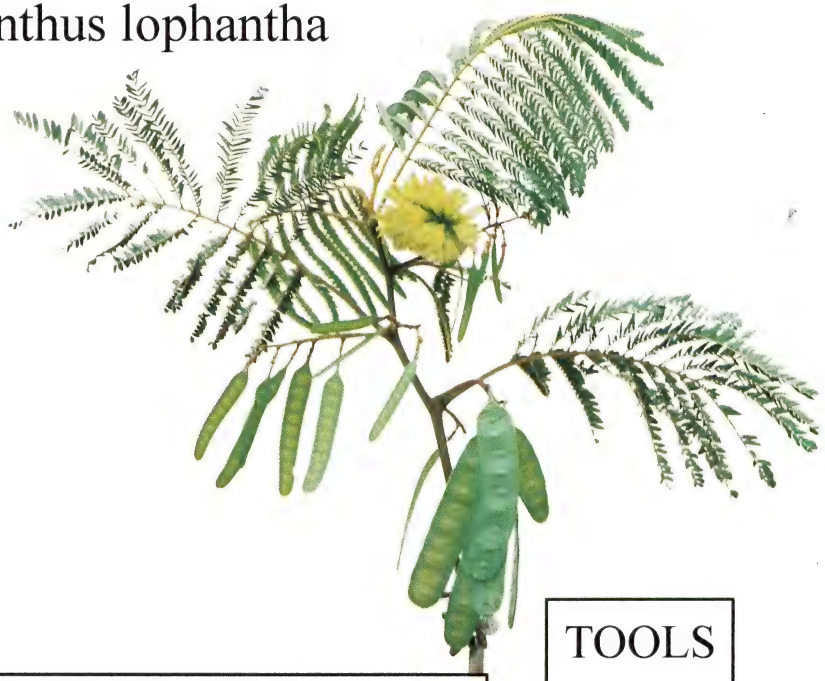


NOTES:

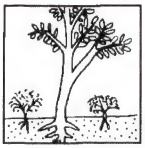
Blackwood is a valuable furniture-making wood, and will be easily sold if care is taken to select suitable straight sections when cutting up the tree. Due to the value of the wood, ring-barking is impractical and wasteful.

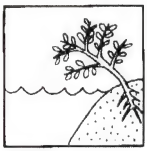
Blackwood is difficult to eradicate and several timely follow-ups will be required.

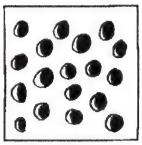
STINKBEAN
Passerianthus lophantha

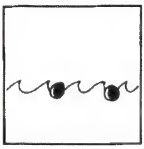


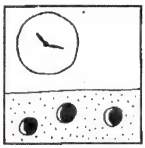
PLANT SURVIVAL

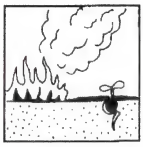


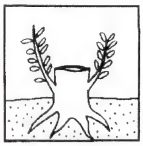


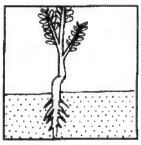


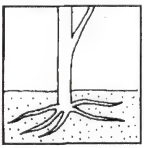




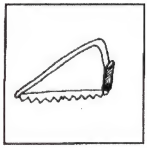


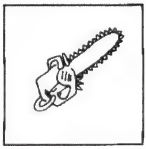






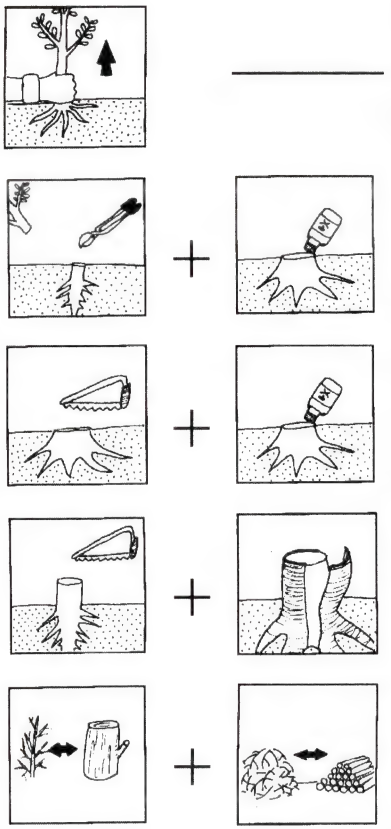
TOOLS





STINKBEAN
Passerianthus lophantha

HOW TO DO IT



NOTES:

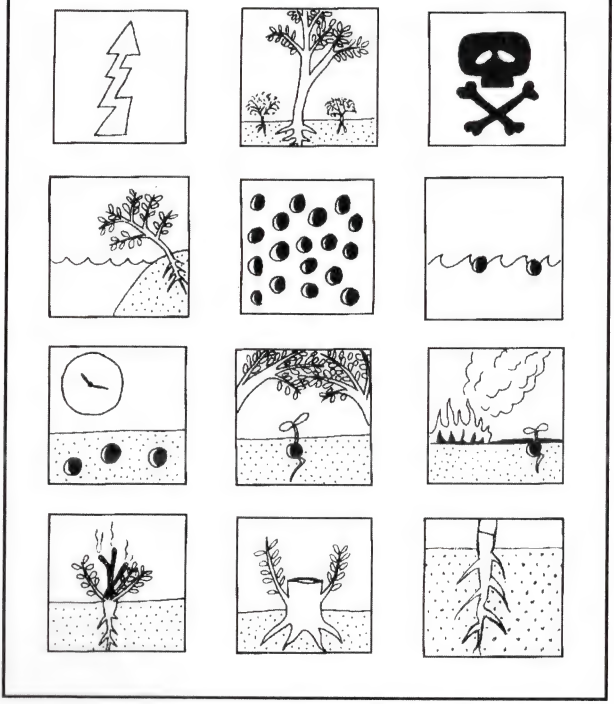
Stinkbean is often confused with black wattle as they have similar leaves and growing conditions.

Stinkbean has a shorter lifespan than black wattle, and adult trees are smaller.

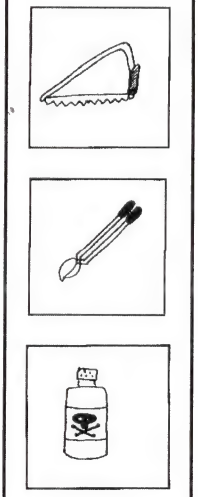
Stinkbean does not resprout as vigorously as black wattle, but initial growth is very fast.

SESBANIA
Sesbania punicia

PLANT SURVIVAL

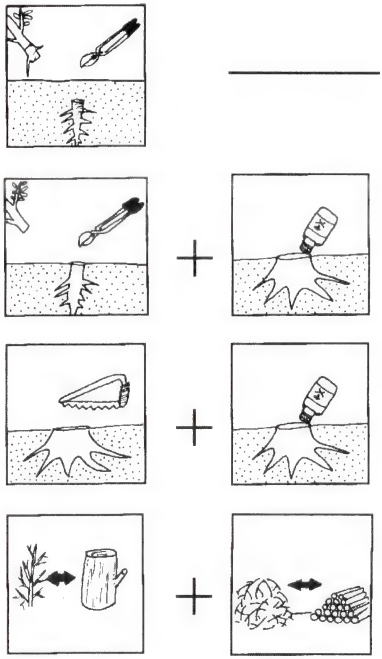


TOOLS



SESBANIA
Sesbania punicia

HOW TO DO IT



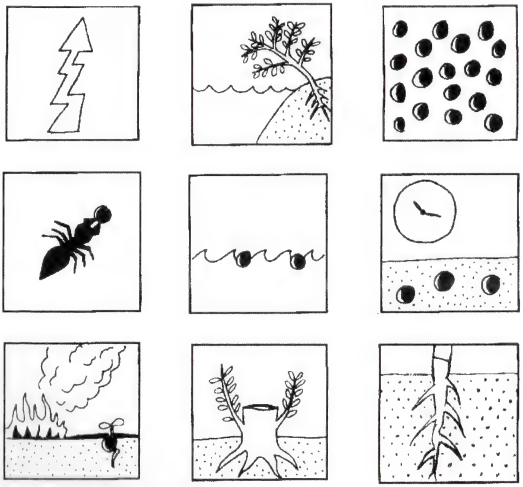
NOTES:

Sesbania favours soggy growing conditions and is found at the edge of vleis and rivers.

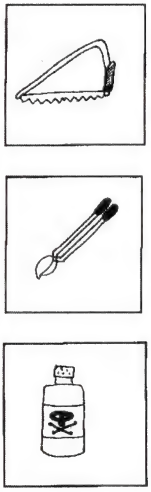
Sesbania has an unpleasant smell and is poisonous. Wash your hands before eating after working with sesbania.

SPANISH BROOM
Spartium junceum

PLANT SURVIVAL

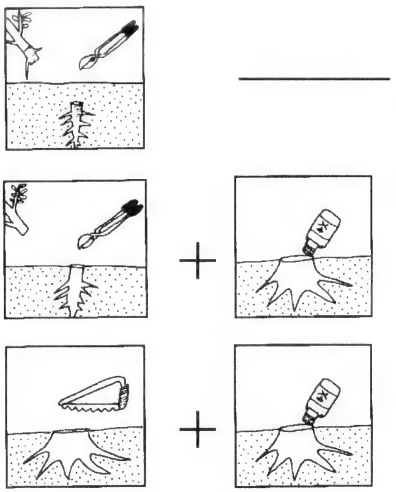


TOOLS



SPANISH BROOM
Spartium junceum

HOW TO DO IT

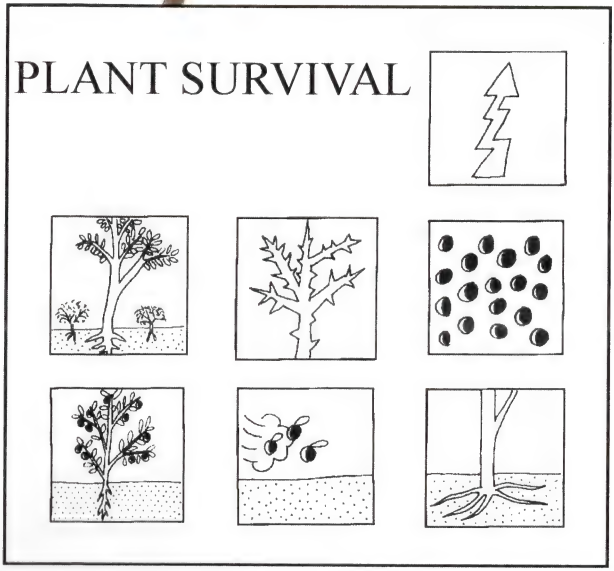


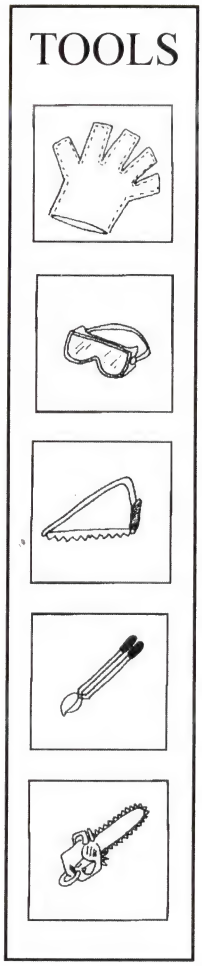
NOTES:

Broom was brought in as an ornamental and because its flowers are showy many people don't regard it as a problem. It is however highly invasive.

HAKEAS
Hakea spp

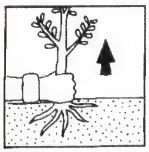
Illustration: Sweet Hakea

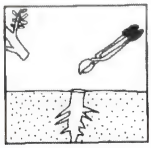


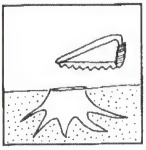


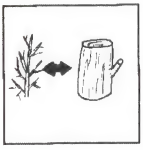
HAKEAS
Hakea spp

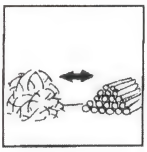
HOW TO DO IT











NOTES:

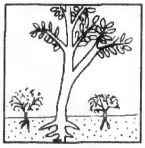
Hakeas drop their seeds a few days after they are cut down. In hot weather seeds are dropped even quicker. In order to prevent seedlings from coming up all over the place, stacking must be done neatly.

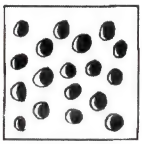
Hakeas do not resprout, but small branches or even leaves which are left on the stump can develop into a new bush.

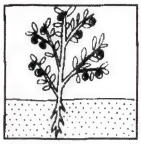
PINES
Pinus spp

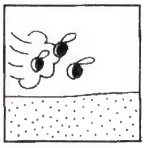
Illustration: Cluster Pine

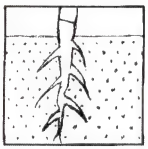
PLANT SURVIVAL



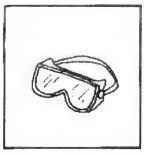


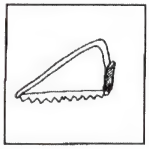


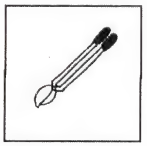


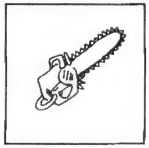


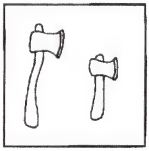
TOOLS





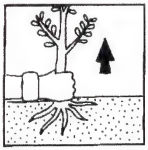


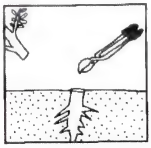


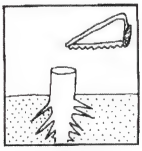


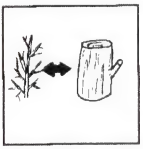
PINES
Pinus spp

HOW TO DO IT

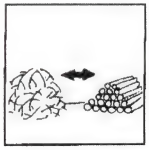


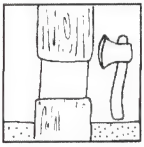






+





NOTES:

With few exceptions, pines do not resprout, so no herbicide is needed.

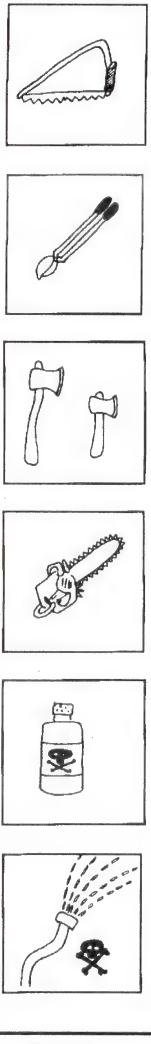
However care must be taken to remove all branches and leaves from the stump.

For canary pines treat the same way as gums.

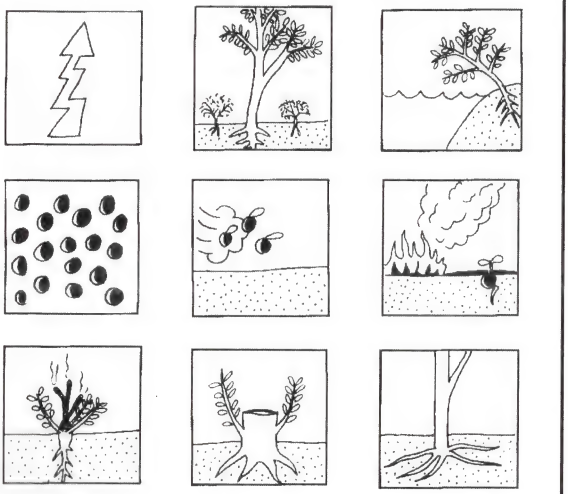
GUMS
Eucalyptus spp

Illustration: Spider Gum

TOOLS

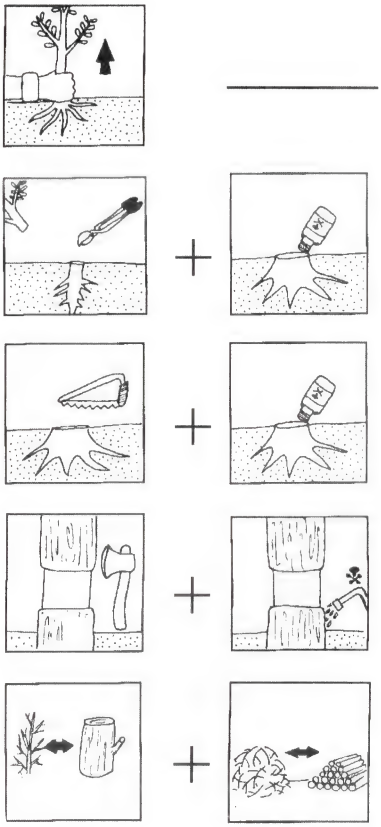


PLANT SURVIVAL



GUMS
Eucalyptus spp

HOW TO DO IT



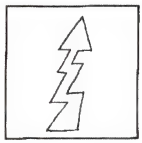
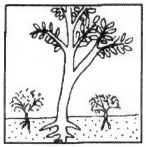
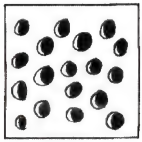
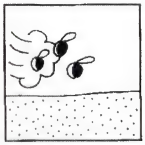
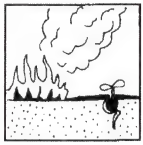
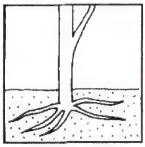
NOTES:

The leaves of all gum trees have that well known "cold medicine" smell. Eucalyptus oil is used to make these medicines.

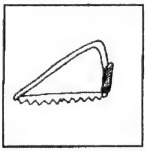
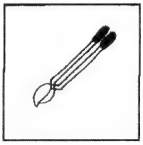
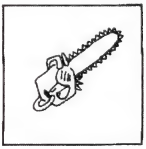
Unlike mature acacias, large gums are capable of resprouting. And usually require repeated applications of herbicide to kill them.

MYRTLE
Leptospermum laevigatum

PLANT SURVIVAL

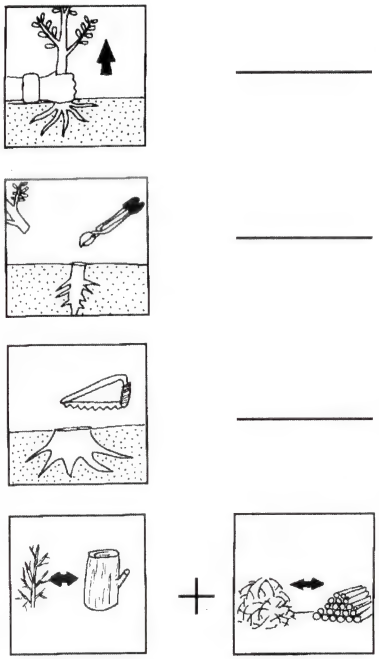







TOOLS

MYRTLE
Leptospermum laevigatum

HOW TO DO IT



NOTES:

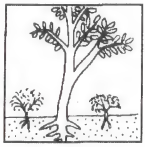
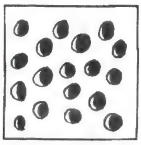
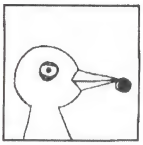
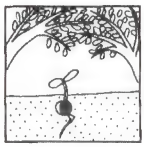
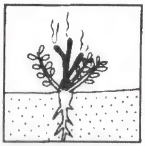
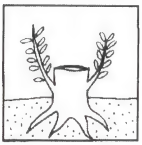
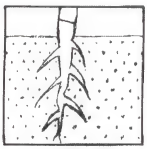
Myrtle often has small branches low down on the stem of quite big trees. If these are left on the stem they continue growing after the tree has been cut down. For this reason it is best to remove the plant as close to the ground as possible.

Myrtle does not resprout.

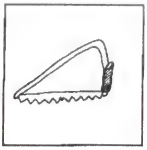
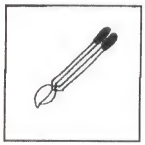
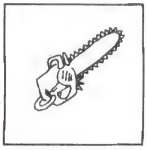
Myrtle makes excellent firewood.

MANATOKA
Myoporum tenuifolium

PLANT SURVIVAL

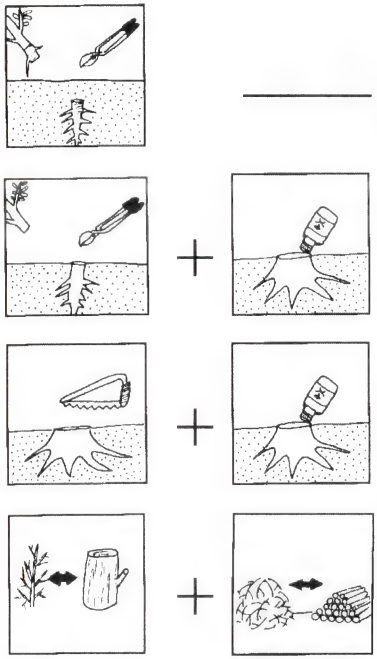








TOOLS

MANATOKA
Myoporum tenuifolium

HOW TO DO IT

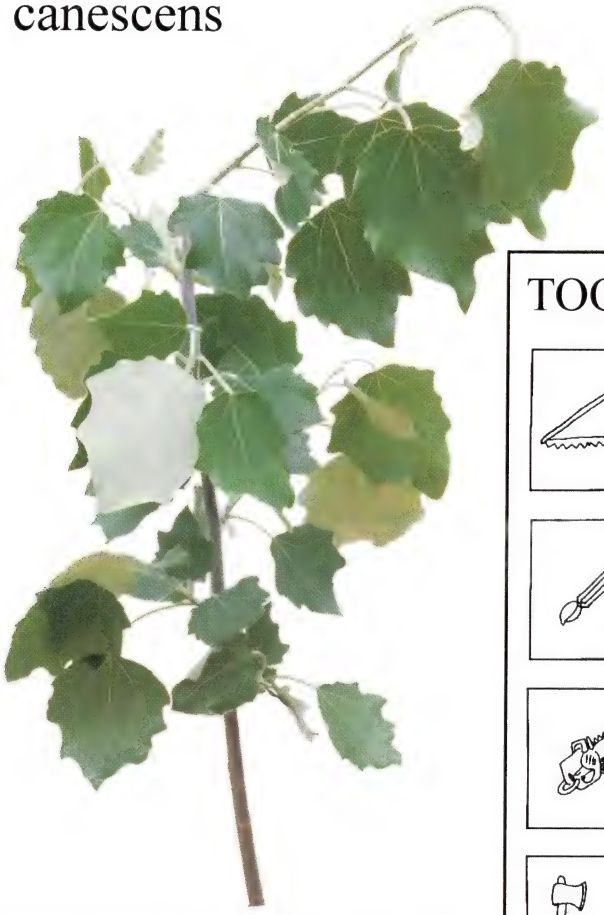


NOTES:

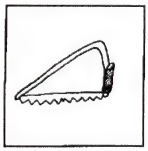
Many people believe Manatoka to be indigenous. In fact it comes from Australia.

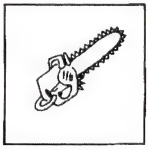
It is difficult to kill Manatoka outright at first attempt. Any resprouting that occurs should be sprayed with herbicide repeatedly until dead.

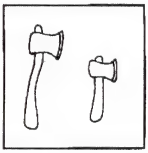
MATCHWOOD POPLAR
Populus x canescens



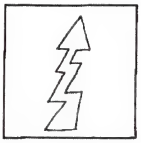
TOOLS

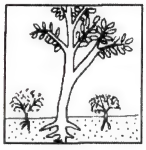


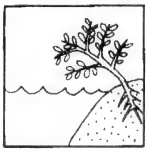


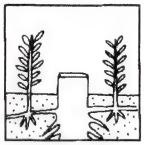


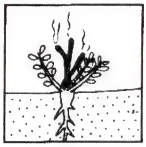
PLANT SURVIVAL



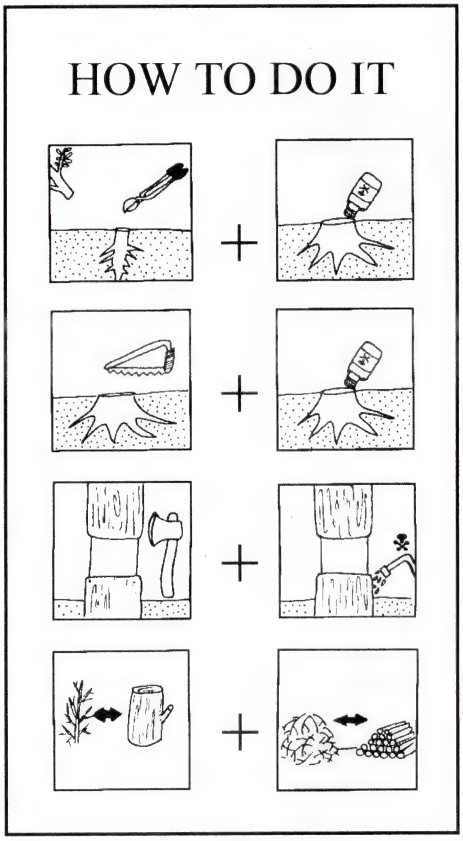








MATCHWOOD POPLAR
Populus x canescens



NOTES:

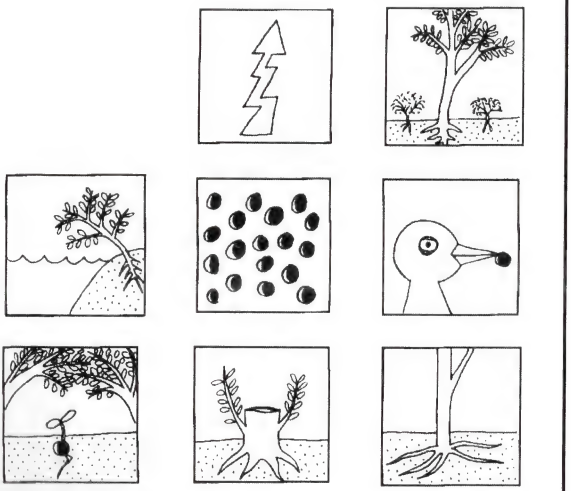
These poplars do not spread by seed in South Africa. New growth sprouts from the roots creating a thicket of small trees. This can happen whenever the 'parent' is damaged.

Poplar cannot invade dry areas and this limits its spread, but it is a very thirsty invader of well-watered areas.

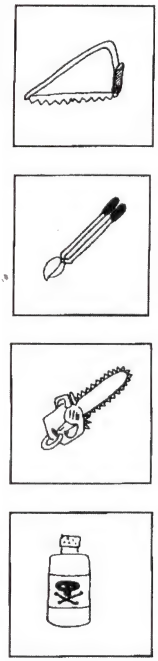
Poplar wood is not readily attacked by borer beetles and this made it an important building material. For this reason it was deliberately planted.

PITTISPORUM
Pittisporum undulatum

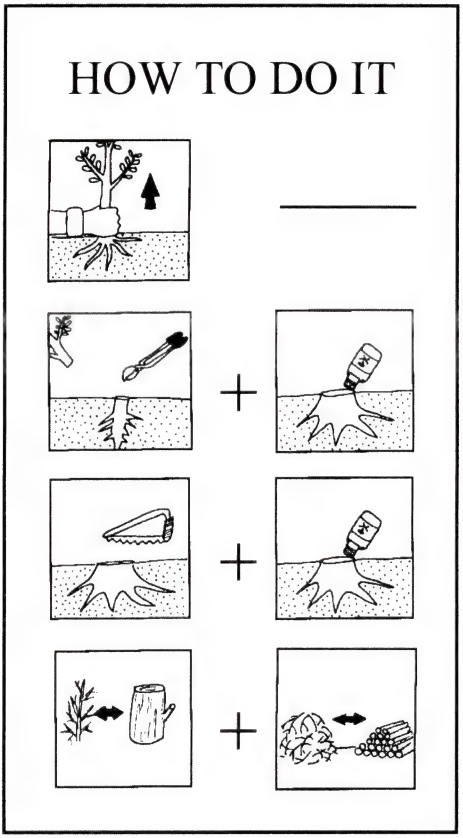
PLANT SURVIVAL



TOOLS



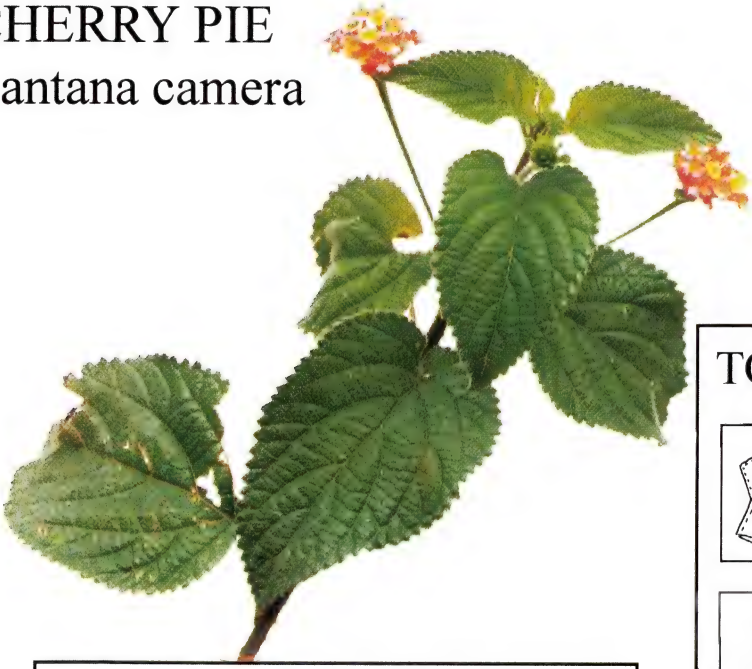
PITTISPORUM
Pittisporum undulatum



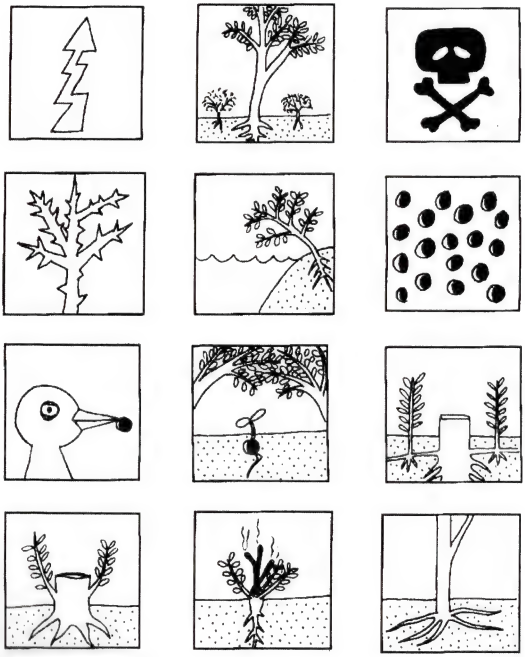
NOTES:

This tree is especially troublesome in forested areas.

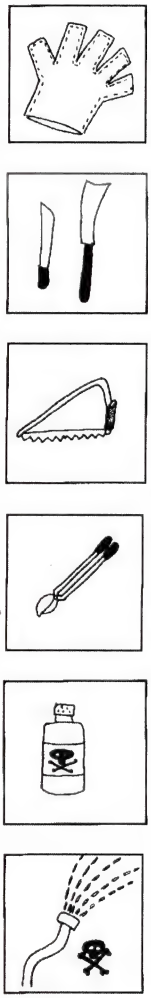
CHERRY PIE
Lantana camera



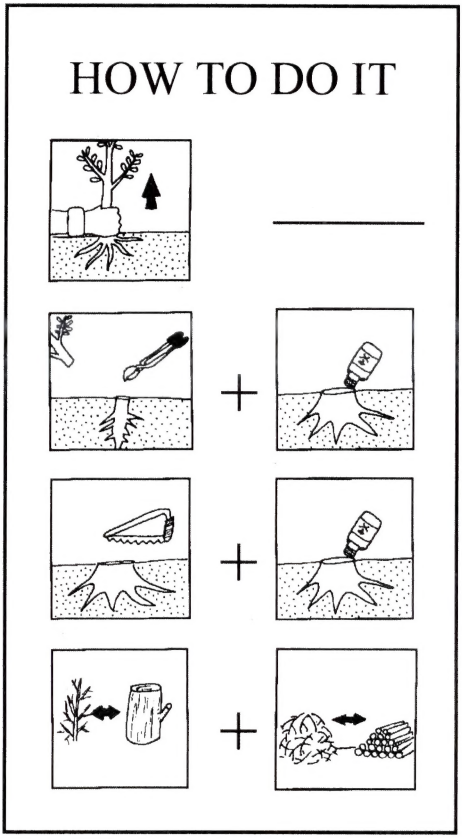
PLANT SURVIVAL



TOOLS



CHERRY PIE
Lantana camera



NOTES:

This is the only plant for which it is necessary to use a panga. It is needed to hack away the prickly branches in order to get at the stump which should then be cut off as close as possible to ground level with a bow saw. The stump, including the remaining bark, should be treated immediately with herbicide.

© 1999 Bo-Kloof Fynbos Conservation & Environmental Information Trust
All rights reserved.

ISBN 0-620-23924-7

ACKNOWLEDGEMENTS:

The production of The Alien Clearing Handbook for the Western Cape was truly a family effort. I am deeply indebted to my wife Alida Croudace for the many many hours she spent hunched over the computer doing the layout for this book.

I am also indebted to my son Kane for converting my spidery sketches to the clear diagrams on which the usefulness this handbook depends.

The Red Hill Fynbos Restoration team gave invaluable feedback on an earlier draft of this handbook, contributing to its final design.

In addition my sincerest appreciation to Marie-Lou Roux of the Habitat Council and Andy Gubb of the Wildlife and Environment Society of South Africa for their enthusiasm about this handbook and their invaluable assistance in bringing it to publication.

Errata:
On contents page and:
pp. 17 & 18 for Passerianthus (lophanta) read Paraserianthes
pp. 19 & 20 for Sesbania punicia read Sesbania punicea
pp. 35 & 36 for Pittisporum (undulatum) read Pittosporum
pp. 37 & 38 for Lantana camera read Lantana camara

Printed by Mills Litho (Pty) Ltd, 11th Avenue, Maitland, Cape Town.

BACKGROUND

The serious problem of alien vegetation invading large portions of South Africa's natural areas has been recognized for some time. In the past several efforts have been made to eradicate alien vegetation with varying degrees of success.

Up until now alien clearing has been seen as an unskilled job, and workers have been sent into the field with scant training or knowledge of the alien plants they are expected to kill. This has resulted in large amounts of money being wasted on ineffectual work. This is particularly true in the case of alien species which resprout after clearing. In such cases the cost of follow up operations often exceeds the cost of initial clearing and usually has to be repeated indefinitely.

Traditionally, the blanket spraying of herbicides has been the preferred method of 'dealing' with resprouting aliens. This is expensive and has a disastrous effect on any surviving fynbos. Bare ground caused by herbicide spraying is more vulnerable to reinfestation by alien vegetation.

ABOUT THIS HANDBOOK

The purpose of this hand book is to make the information needed for killing invading alien plants at first encounter (with minimal damage to indigenous vegetation), accessible to the largely illiterate workers who are employed to clear the catchments and other natural areas.

Botanical concepts such as *serotiny* (the retention of seeds until the death of the plant) and *myrmecochory* (dispersal of seeds by ants) as well as other 'tricks' employed by the species to ensure its survival have been represented by diagrams under the heading of PLANT SURVIVAL. There are twenty diagrams in this category, and workers will be required to learn their meaning by heart in order to make the best use of this handbook.

TOOLS are also depicted under their own heading, but these diagrams are self explanatory.

Diagrams explaining the appropriate methods of eradication for each species are included under the heading HOW TO DO IT and are self explanatory but will require some degree of familiarisation by the user.

Additional information too difficult to depict diagrammatically has been included as NOTES for each species.

CONTENTS

	Pages
GLOSSARY (What the pictures mean)	1 – 4
PORT JACKSON (Acacia saligna)	5 – 6
ROOIKRANS (Acacia cyclops)	7 – 8
GOLDEN WATTLE (Acacia pycnantha)	9 – 10
BLACK WATTLE (Acacia mearnsii)	11 – 12
LONGLEAF WATTLE (Acacia longifolia)	13 – 14
BLACKWOOD (Acacia melanoxylon)	15 – 16
STINKBEAN (Passerianthus lophantha)	17 – 18
SESBANIA (Sesbania punicia)	19 – 20
SPANISH BROOM (Spartium junceum)	21 – 22
HAKEAS (Hakea spp)	23 – 24
PINES (Pinus spp)	25 – 26
GUMS (Eucalyptus spp)	27 – 28
MYRTLE (Leptospermum laevigatum)	29 – 30
MANATOKA (Myoporum tenuifolium)	31 – 32
MATCHWOOD POPLAR (Populus x canescens)	33 – 34
PITTISPORUM (Pittisporum undulatum)	35 – 36
CHERRY PIE (Lantana camera)	37 – 38
ACKNOWLEDGEMENTS	39
BACKGROUND	40
ABOUT THIS HANDBOOK	40

ISBN 0-620-23924-7

BOTANICAL SOCIETY
TEL: 762 1421
R35-00